

CONDENSED TRANSCRIPT

IN THE COURT OF UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

SOUTH CAMDEN CITIZENS IN ACTION,
GENEVA SANDERS, PAULINE WOODS,
BARBARA PFEIFFER, JULITA GILLIARD,
OSCAR LISBOA, PHYLLIS HOLMES,
GWEN PETERSON, LATOYA COOPER, JULIO
LUGO, LULA WILLIAMS and
SHARON CHRISTIE POTTER,
Plaintiffs

V. C.A. NO. 01-cv-702 (FLW)

THE NEW JERSEY DEPARTMENT OF
ENVIRONMENTAL PROTECTION, BRADLEY
CAMPBELL, Commissioner of The NJ
Dept. of Environmental Protection,
In his official capacity,
Defendant,

V.

ST. LAWRENCE CEMENT CO., L.L.C.,
Intervenor

Oral deposition of STUART
A. BATTERMAN, Ph.D., held in the law
offices of Kirkpatrick & Lockhart
Nicholson Graham LLP, One Newark
Center, Tenth Floor, Newark, New
Jersey, on Monday, April 11, 2005,
commencing at 10:07 a.m., before
Kathleen McHugh, a Registered
Professional Reporter and Notary
Public.



James DeCrescenzo Reporting, LLC

INNOVATING LITIGATION

1880 JFK Blvd., 6th Floor • Philadelphia, PA 19103

www.jdreporing.com

215.564.3905
PHONE

215.751.0581
FAX

EXHIBIT QQ

ORAL DEPOSITION OF STUART BATTERMAN, Ph.D. - 04-11-05

214

1 A. Amounts of sulfates, I
2 would imagine, would be pretty
3 small. Nitrates as well. There may
4 be some traces of elemental carbon,
5 but probably quite low as well.
6 Q. You've heard of the term
7 "crustal material"?
8 A. Yes.
9 Q. Would you agree that
10 St. Lawrence's material is a crustal
11 material?
12 A. A component of the slag
13 would be of crustal origin. To that
14 extent, I agree.
15 Q. To what extent might you
16 not agree?
17 A. Crustal material usually
18 refers to material in the near - in
19 the surficial layers of the earth's
20 crust, which is primarily aluminum
21 oxides, silicon oxides, clays and
22 soils and things like this. It
23 doesn't necessarily refer to material
24 that's been through a blast furnace.

215

1 Q. Would you know whether the
2 slag material at SLC contains high
3 proportions of elements such as
4 aluminum, calcium, silicon similar to
5 soil and rock that you mentioned?
6 A. I've seen one - I believe
7 it was in a pie chart - expressing
8 the composition of a couple of those
9 elements and there were high
10 concentrations of aluminum and
11 silicon in that material.
12 Q. Based on what you've
13 reviewed, do you have any reason to
14 think the slag material is not a
15 crustal material?
16 A. I don't know the
17 composition of other materials or I
18 don't know the composition of these
19 trace materials which could vary from
20 the types of aerosols that are
21 considered to be of crustal origin.
22 Q. I'm not sure I understand
23 you. Are you saying you don't know
24 if it's there or you have some

216

1 information -
2 A. No. I would say that the
3 bulk of the material, in terms of
4 those couple of - of the aluminum,
5 the silicon and so forth, resembles
6 crustal material, that much I agree.
7 The other components I don't know
8 because I haven't seen any
9 information.
10 Q. What other components are
11 you referring to?
12 A. Trace constituents. For
13 example, even if we look at crustal
14 material, we find in crustal
15 materials a certain amount of lead,
16 mercury, cadmium, rare earths, trace
17 elements, those can vary
18 tremendously. We also find a certain
19 amount of carbon material.
20 It constitutes a very small
21 fraction of the total bulk, but
22 differences in those kinds of
23 materials in the relative amounts do
24 vary. I haven't seen an analysis of

217

1 the trace elements or the trace
2 organics in the emissions from
3 St. Lawrence.
4 Q. Would you expect that the
5 emissions at St. Lawrence would be
6 significantly different from the
7 material itself?
8 A. Could be.
9 Q. Why do you think it could
10 be?
11 A. I don't know that it is,
12 but it could be. We find that, for
13 example, the material that may break
14 into very small pieces could be
15 structurally and chemically different
16 from the bulk composition.
17 Q. Would you get a widely
18 differing - have you found you could
19 get a widely differing result?
20 A. Probably not. It's
21 possible.
22 Q. Is it true that all the
23 studies you reviewed and that you
24 reference in your report are based on



James DeCrescenzo Reporting, LLC

215.564.3905

Innovating Litigation
1880 JFK Blvd., 6th Floor, Philadelphia, PA 19103
www.JDReporting.com

FAX 215.751.0581

ORAL DEPOSITION OF STUART BATTERMAN, Ph.D. - 04-11-05

214

1 A. Amounts of sulfates, I
2 would imagine, would be pretty
3 small. Nitrates as well. There may
4 be some traces of elemental carbon,
5 but probably quite low as well.
6 Q. You've heard of the term
7 "crustal material"?
8 A. Yes.
9 Q. Would you agree that
10 St. Lawrence's material is a crustal
11 material?
12 A. A component of the slag
13 would be of crustal origin. To that
14 extent, I agree.
15 Q. To what extent might you
16 not agree?
17 A. Crustal material usually
18 refers to material in the near -- in
19 the surficial layers of the earth's
20 crust, which is primarily aluminum
21 oxides, silicon oxides, clays and
22 soils and things like this. It
23 doesn't necessarily refer to material
24 that's been through a blast furnace.

215

1 Q. Would you know whether the
2 slag material at SLC contains high
3 proportions of elements such as
4 aluminum, calcium, silicon similar to
5 soil and rock that you mentioned?
6 A. I've seen one -- I believe
7 it was in a pie chart -- expressing
8 the composition of a couple of those
9 elements and there were high
10 concentrations of aluminum and
11 silicon in that material.
12 Q. Based on what you've
13 reviewed, do you have any reason to
14 think the slag material is not a
15 crustal material?
16 A. I don't know the
17 composition of other materials or I
18 don't know the composition of these
19 trace materials which could vary from
20 the types of aerosols that are
21 considered to be of crustal origin.
22 Q. I'm not sure I understand
23 you. Are you saying you don't know
24 if it's there or you have some

216

1 information --
2 A. No. I would say that the
3 bulk of the material, in terms of
4 those couple of -- of the aluminum,
5 the silicon and so forth, resembles
6 crustal material, that much I agree.
7 The other components I don't know
8 because I haven't seen any
9 information.
10 Q. What other components are
11 you referring to?
12 A. Trace constituents. For
13 example, even if we look at crustal
14 material, we find in crustal
15 materials a certain amount of lead,
16 mercury, cadmium, rare earths, trace
17 elements, those can vary
18 tremendously. We also find a certain
19 amount of carbon material.
20 It constitutes a very small
21 fraction of the total bulk, but
22 differences in those kinds of
23 materials in the relative amounts do
24 vary. I haven't seen an analysis of

217

1 the trace elements or the trace
2 organics in the emissions from
3 St. Lawrence.
4 Q. Would you expect that the
5 emissions at St. Lawrence would be
6 significantly different from the
7 material itself?
8 A. Could be.
9 Q. Why do you think it could
10 be?
11 A. I don't know that it is,
12 but it could be. We find that, for
13 example, the material that may break
14 into very small pieces could be
15 structurally and chemically different
16 from the bulk composition.
17 Q. Would you get a widely
18 differing -- have you found you could
19 get a widely differing result?
20 A. Probably not. It's
21 possible.
22 Q. Is it true that all the
23 studies you reviewed and that you
24 reference in your report are based on



James DeCrescenzo Reporting, LLC

215.564.3905

Innovating Litigation
1880 JFK Blvd., 6th Floor, Philadelphia, PA 19103
www.JDReporting.com

FAX 215.751.0581

ORAL DEPOSITION OF STUART BATTERMAN, Ph.D. - 04-11-05

218

1 noncrustal particulates?

2 A. No.

3 Q. What do you believe is
4 studies are related to crustal --

5 A. Oh, I think almost all of
6 these studies aren't, in fact,
7 apportioning the particulate matter
8 to one source or another. So crustal
9 material is a component of the PM
10 that's in most of these health
11 studies that I've cited.

12 Q. Do any health studies
13 you're aware of specifically discuss
14 the impact of crustal material?

15 A. That EPA uses? Perhaps
16 there's some. I don't recall. Most
17 of them are looking at urban
18 aerosols. And that includes crustal
19 material, that includes carbon, it
20 includes sulfate, it includes the
21 other things you talked about.

22 Q. When you're saying it
23 includes crustal material, crustal
24 material, if you did it on a pie

220

1 see -- on a PM10 basis, what would
2 you think the crustal --

3 A. It varies tremendously.

4 For example, the contributions in
5 arid areas where there's a lot of
6 entrained soils, for example, or in
7 eastern areas that are dry and dusty
8 during the summertime.

9 Q. What I'm asking you
10 about -- I'm being somewhat
11 specific. I'm talking about most of
12 the studies are conducted in urban
13 areas; is that true?

14 A. Um-hum.

15 Q. And that's where most of
16 the data is coming out of, is that
17 fair?

18 A. We're talking about several
19 types of studies here. Most of the
20 health effect studies, which I think
21 is what you're after, are conducted
22 in urban areas. Certainly studies
23 looking at components of aerosol are
24 conducted everywhere.

219

1 chart, would be a very minor amount
2 of it; is that fair to say?

3 A. It depends. For PM10, the
4 amount of crustal material can be
5 more than a very narrow sliver. For
6 PM2.5, the sliver decreases
7 typically. Most of the PM2.5, not
8 all of it, is from combustion sources
9 and is chemically different from
10 the -- much of the material that
11 contributes to the PM10. So, in
12 other words, the PM10 has a higher
13 crustal component.

14 Q. And could you express that
15 on a percentage basis?

16 A. Sure. Varies.

17 Q. What do you think the range
18 is?

19 A. For Camden, the PM10
20 contribution from crustal sources, I
21 don't have a specific number in mind.

22 Q. What about the EPA and
23 other studies that were conducted in
24 urban areas; what would you expect to

221

1 Q. Would you expect that the
2 large majority of emissions looking
3 at particulates are from combustion
4 sources?

5 A. For PM2.5, that's likely to
6 be true.

7 Q. How about for PM10?

8 A. It's a mix for PM10.

9 Q. Would you say that it's --
10 the large majority is from combustion
11 sources?

12 MR. COLE: I'm going to
13 allow this to go on for a little bit
14 longer, but it seems like you've
15 asked the same question seven
16 different ways here, Brian.

17 MR. MONTAG: I hear you,
18 but I'd like an answer to this one.

19 BY MR. MONTAG:

20 Q. Specifically for PM10, is
21 it fair to say the large majority in
22 the urban area studies would be from
23 combustion sources?

24 A. I don't know what "large



James DeCrescenzo Reporting, LLC

215.564.3905

Innovating Litigation
1880 JFK Blvd., 6th Floor, Philadelphia, PA 19103
www.JDReporting.com

FAX 215.751.0581